

REMARKS

The captioned application is a continuation application. All of the claims that were part of the ancestor application as filed were previously cancelled without prejudice because those were not the claims being pursued in the captioned continuation application. None of those claims was cancelled for reasons of patentability.

Claims 22 through 46 were previously copied substantially on 13 March 2002 from U.S. Patent No. 6,239,744 ("the '744 patent," issued on 29 May 2001 naming Singer and Drach as inventors), for the purpose of provoking an interference with the '744 patent and with an application ("the '268 application," published on 25 October 2001 as US 2001/0033247 A1) that was a continuation of the application that issued as the '744 patent. A Request for an Interference accompanied the 13 March 2002 preliminary amendment of the captioned application. There has not been any Office Action concerning the captioned application.

The '268 application issued on 13 January 2004 as U.S. Patent No. 6,677,896 ("the '896 patent") subject to a terminal disclaimer submitted to overcome a non-statutory double patenting rejection.

New claims 47 through 63 of the captioned application are copied from the '896 patent. A Request for an Interference with the '744 patent and the '896 patent accompanies this preliminary amendment. It is respectfully submitted that pending claims 22 through 63 are in condition for allowance.


A check is enclosed to pay the fee required for the claims submitted. The Commissioner is hereby authorized to charge any additional fee which may be required for the captioned application under 37 C.F.R. 1.16-1.18, including but not limited to the

issue fee, or to credit any overpayment, to Deposit Account No. 23-0920. Should no proper amount be enclosed, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 23-0920.

Respectfully submitted,

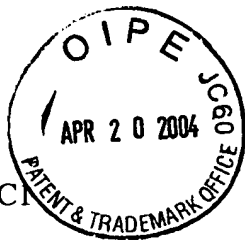
Date: 20 April 2004

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PATENT
7836/84512USC



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant: Heinz et al.)
)
Ser. No.: 10/025,155)
)
Filed: 18 December 2001)
)
For: ANTENNA CONTROL SYSTEM)
)
Art Unit: 2824)
)
Examiner: Not Yet Assigned)
_____)

**37 C.F.R. 1.607 REQUEST FOR
AN INTERFERENCE WITH TWO PATENTS**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir or Madam:

On 13 March 2002, the applicants requested an interference between the captioned application (the '155 application) and both U.S. Patent No. 6,239,744 (the '744 patent) and its published continuation application Ser. No. 09/817,268 (the '268 application). The '268 application recently issued as U.S. Patent No. 6,677,896 (the '896 patent).

This is a request, pursuant to 37 C.F.R. 1.607, for an interference between the '155 application and both the '744 patent and the '896 patent. The claims of the two patents are not patentably distinct, and the '896 patent issued subject to a terminal disclaimer submitted to overcome a non-statutory double patenting rejection.

I. 37 C.F.R. 1.607(a)(1).

The '744 patent issued on 29 May 2001 for a Remote Tilt Antenna System. It identified Andrew Singer and William Drach as inventors, and Radio Frequency Systems, Inc. of Paris, France as assignee. The '896 patent issued on 13 January 2004, with the same title, inventors, and assignee. It is identified as a continuation of the application that issued as the '744 patent.

II. 37 C.F.R. 1.607(a)(2).

A copy of the count proposed by the applicants is attached. It is substantially a disjunctive combination of claims 22-42 and 47-63 of the '155 application, or a disjunctive combination of claims 1-3, 5, 8-13, 16-21, 25-27 and 32-33 of the '744 patent, and claims 1-4, 8-13, 18, 22-26 and 28 of the '896 patent. The claim numbers of the '155 application are inserted in the proposed count for convenience.

The proposed count is in the format approved by the Commissioner in Orikasa v. Oonishi, 10 U.S.P.Q.2d 1996, 2003 (Comm'r 1989), and Davis v. Uke, 27 U.S.P.Q.2d 1180, 1188 (Comm'r 1993). It is noted in particular that, pursuant to the Commissioner's opinion in Orikasa, it is appropriate to use a count of this type where the recited claims are in different statutory classes so long as the subject matter recited in the various claims is not patentably distinct.

III. 37 C.F.R. 1.607(a)(3).

All claims in the '744 patent correspond to the proposed count. Indeed, 25 of those claims (1-3, 5, 8-13, 16-21, 25-27, 32-33, 38-40 and 45) are substantially included in the

proposed count. The other 23 claims of the '744 patent are dependent claims which are not patentably distinct from claims included in the proposed count.

All claims in the '896 patent correspond to the proposed count. Indeed, 17 of those claims (1-4, 8-13, 18, 22-26 and 28) are included in the proposed count. The other 15 claims of the '896 patent are dependent claims which are not patentably distinct from the claims included in the proposed count.

The following chart identifies the claims in the captioned application and the two patents that are substantially the same.

'155 Application	'744 Patent	'896 Patent
22	1	
23	2	
24	3	
25	5	
26	8	
27	9	
28	10	
29	11	
30	12	
31	13	
32	16	
33	17	
34	18	
35	19	
36	20	
37	21	
38	25	
39	26	
40	27	
41	32	
42	33	
43	38	
44	39	
45	40	
46	45	
47		1
48		2

49		3
50		4
51		8
52		9
53		10
54		11
55		12
56		13
57		18
58		22
59		23
60		24
61		25
62		26
63		28

The 23 claims of the '744 patent and the 15 claims of the '896 patent that are not included in the proposed count are all dependent claims, that are not patentably distinct from claims included in the proposed count and therefore correspond to the proposed count. They include, directly or indirectly, obvious variations on disclosed features such as the user interface being remote from a main controller ('744 cl 4, 14-15, 29, '896 cl 5, 27, 31, 32) and communicating over a wireless interface ('744 cl 6, 30, '896 cl 6, 29) or over a telephone line ('744 cl 7, 31, '896 cl 7, 30), using a packet protocol ('744 cl 22-24), or the main controller being at the antenna site rather than remote ('744 cl 28); such as the sensor being one of different known types of sensors ('744 cl 34 (incremental encoder), cl 35 (optical), cl 36 (mechanical brush), cl 37 (Hall effect)); and such as repeating certain steps a specified number of times if the antenna controller does not respond ('744 cl 41, 46, '896 cl 14, 19), repeating certain steps for a plurality of antennas ('744 cl 42, 44, 47, '896 cl 15, 17, 20), or reporting errors if controllers do not respond ('744 cl 43, 48, '896 cl 16, 21). These dependent claims all correspond to the proposed count.

IV. 37 C.F.R. 1.607(a)(4).

All presently pending claims of the '155 application (i.e. claims 22 through 63 listed in the 37 C.F.R. 1.607(a)(4) Amendment submitted with this Request) correspond to the proposed count.

V. 37 C.F.R. 1.607(a)(5).

The terms of each of claims 22 through 46 were applied to the disclosure of the '155 application in the Request for Interference submitted on 13 March 2002. The terms of each of claims 47 through 63 (i.e., the '155 application claims identified as corresponding to the proposed count and not previously pending in the application) can be applied to the disclosure of the application as follows:

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
47. An antenna control system comprising:	For example, 1:3-5; 22:1-3.
a sensor for detecting a position of a down-tilt antenna without respect to a satellite position;	For example, 11:21-24; 14:4-9; Figs. 5 and 6. Antenna down-tilt is controlled by movement of phase shifters, which is sensed by switch 43 and magnets 44.
an antenna controller communicating with said sensor for controlling said antenna position;	For example, 15:1-9; Fig. 7. Signals changed by switch 43 are provided to controller 80 for controlling antenna position.
a main controller communicating with said antenna controller in order to control said antenna controller; and	For example, 18:1-19. Central controller 89 communicates with controller 80.
a user interface communicating with said main controller to operate said main controller.	For example, 18:20 – 21:9. Central controller 89 may be a PC running windows based software (18:20-22), indicating communication with a user interface. In addition, the cited pages include several references to user interaction as well as to a screen (18:22) and a mouse (20:13).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
48. The antenna control system according to claim 47,	
wherein the user interface transmits data to said main controller to position said down-tilt antenna and receives data from said main controller indicating said antenna position.	For example, 19:14 – 20:11.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
49. The antenna control system according to claim 48,	
wherein said main controller informs said user interface that said main controller is unable to communicate with said antenna controller.	For example, 20:12-16; 20:17 – 21:4 (eg if reported antenna status remains “queued” and does not proceed to “reading,” “measuring,” “setting,” “nudging” etc.).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
50. The antenna control system according to claim 48,	
wherein said main controller informs said user interface that it is unable to adjust said antenna position to a desired antenna position.	For example, 20:12-16; 21:4; and 17:29-31 in combination with 18:6-8.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
51. An antenna control system comprising:	For example, 1:3-5; 22:1-3.
a sensor for detecting a position of a down-tilt antenna without respect to a satellite position;	For example, 11:21-24; 14:4-9; Figs. 5 and 6. Antenna down-tilt is controlled by movement of phase shifters, which is sensed by switch 43 and magnets 44.
an antenna controller communicating with said sensor for controlling said antenna position;	For example, 15:1-9; Fig. 7. Signals changed by switch 43 are provided to controller 80 for controlling antenna position.
a main controller communicating with said antenna controller in order to control said antenna controller,	For example, 18:1-19. Central controller 89 communicates with controller 80.
wherein said main controller is remotely located from said down-tilt antenna, and	For example, 18:1-2.
an antenna controller memory connected to said antenna controller for storing at least one of an antenna address and said antenna position.	For example, 17:6-7; 17:11-14.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
52. The antenna control system according to claim 51, further comprising	
a main controller memory connected to said main controller for storing at least one of an antenna address and said antenna position.	For example, 21:10-12.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
53. The antenna control system according to claim 51, further comprising:	
a motor for adjusting said antenna position; and	For example, 11:19; Fig. 6 (motor 41).
a driver connected to said motor and said antenna controller for activating said motor.	For example, 6:21-23; Figs. 7 and 8 (driver is in controller 80).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
54. A method of positioning a down-tilt antenna in an antenna control system used in land-based mobile communications, said method comprising the steps of:	For example, 1:3-5; 22:1-3 (cellular communication systems can be land-based mobile communications).
(A) establishing a current position of the down-tilt antenna by;	For example, 19:14-17.
(i) sending an antenna check command to an antenna controller,	For example, 19:16-17 (as current angle is communicated from antenna controller 80 to central controller 89 at start-up, then start-up must include sending a check command to antenna controller signaling that the current angle should be sent to central controller).
(ii) reading a tilt position stored in a memory of the antenna controller, and	For example, 17:6-7 (current angle can be stored in memory of antenna controller, from where it may be read for sending to central controller).
(iii) sending the tilt position read from the memory to a main controller; and	For example, 19:14-16.
(B) adjusting the tilt of the down-tilt antenna by;	
(i) sending a change-tilt command to the main controller,	For example, 20:3-5 (with adjust function, user communicates a new angle to central controller).
(ii) calculating a difference between the tilt position and the change-tilt command to determine an antenna adjust command, and	For example, 16:8-15 (based on new angle entered, current angle is altered by motor driven in desired direction for predetermined number of pulses to achieve the new angle – the desired direction and predetermined number of pulses correspond with the difference between the current angle and the new angle, and must be determined).
(iii) sending the antenna adjust command to an antenna motor driver assembly to adjust the tilt of the down-tilt antenna.	For example, 16:8-15 (the desired direction and predetermined number of pulses must be communicated to the motor driver assembly (such as in Fig. 6)); 18:6-8 (the adjust command may be effected remotely at central controller).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
55. The method according to claim 54, wherein step (B) further comprises,	
(iv) reading the newly adjusted tilt position of the down-tilt antenna via a sensor, and	For example, 20:9-11; sensor (magnets 44 and switch 43).
(v) writing the newly adjusted tilt position as the tilt position in the memory of the antenna controller.	For example, 17:6-9 (updating memory of antenna controller with actual angle).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
56. A method of performing a system check on a tilt antenna control system, said method comprising the steps of:	
(A) requesting a system check by a user via a user interface;	For example, 19:23-25 and 20:9-11. For example, 27:3-8 (original claim 21) in combination with 26:28 – 27:2 (original claim 20) describes a central controller communicating with a plurality of antenna controllers; 18:20 –21:9 (several references to user interaction as well as to a screen (18:22) and a mouse (20:13), also central controller 89 may be a PC running windows based software (18:20-22), indicating communication with a user interface).
(B) transmitting an antenna check command from a main controller to an addressed one of a plurality of antenna controllers;	For example, 20:1-2 (user may specify the addressed antenna). As the actual angle of the antenna will be measured, the command will be transmitted from the central controller (interfacing with the user) to the addressed antenna controller.
(C) returning an antenna position from the addressed antenna controller to the main controller; and	For example, 19:14-16; 17:6-9 in combination with 18:6-8 (actual angle updated in memory, and function may be effected remotely at central controller); 21:10-12 (information – ie actual angle – can be stored and updated at central controller).
(D) determining whether the addressed antenna controller responded.	For example, 20:12-16; 20:17 – 21:4 (eg if reported antenna status remains “queued” and does not proceed to “reading” or “measuring”).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
57. A method of performing a tilt setting change on an antenna system, said method comprising the steps of:	
(A) transmitting a tilt setting change command, selected by a user, from a user interface to a main controller; and	For example, 20:3-5 (with adjust function, user communicates a new angle to central controller). For example, 27:3-8 (original claim 21) in combination with 26:4-9 (original claim 14) describes a central controller communicating with a plurality of antenna controllers, and a plurality of downtilt antennas each associated to one of the antenna controllers; 18:20 –21:9 (several references to user interaction as well as to a screen (18:22) and a mouse (20:13), also central controller 89 may be a PC running windows based software (18:20-22), indicating communication with a user interface).
(B) transmitting a change tilt command combined with an antenna controller address from the main controller to an addressed antenna controller of a plurality of antenna controllers.	For example, 20:1-2 (user may specify the addressed antenna); 18:1-8 (the adjust command may be effected remotely at central controller, but it must be transmitted to the addressed antenna controller to be executed).

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
58. The antenna control system according to claim 47,	
wherein the position of the down-tilt antenna is an electrical down-tilt.	For example, 7:1-2.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
59. The antenna control system according to claim 47,	
wherein the position of the down-tilt antenna is a position of at least one phase shifter.	For example, 3:25-27; 4:1-4.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
60. The method according to claim 54, wherein the tilt position is an electrical down-tilt.	For example, 7:1-2.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
61. The method according to claim 54, wherein the tilt position is a position of at least one phase shifter.	For example, 3:25-27; 4:1-4.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
62. An antenna control system comprising:	
a sensor for detecting a position of components used to down tilt an antenna and by this action determine the down tilt of the antenna;	For example, 11:21-24; 14:4-9; Figs. 5 and 6. Antenna down-tilt is controlled by movement of phase shifters, which is sensed by switch 43 and magnets 44.
an antenna controller communicating with said sensor for controlling said antenna position;	For example, 15:1-9; Fig. 7. Signals changed by switch 43 are provided to controller 80 for controlling antenna position.
a main controller communicating with said antenna controller in order to control said antenna controller,	For example, 18:1-19. Central controller 89 communicates with controller 80.
wherein said main controller is remotely located from said antenna,	For example, 18:1-2.
a user interface communicating with said main controller to operate said main controller, and	For example, 18:20 – 21:9. Central controller 89 may be a PC running windows based software (18:20-22), indicating communication with a user interface. In addition, the cited pages include several references to user interaction as well as to a screen (18:22) and a mouse (20:13).
an antenna controller memory connected to said antenna controller for storing at least one of an antenna address and said antenna position.	For example, 17:6-7; 17:11-14.

<u>Terms of the Claim</u>	<u>Application to the Disclosure of the Application</u>
63. The antenna control system according to claim 62,	
wherein the user interface transmits data to said main controller to position said antenna and receives data from said main controller indicating said position.	For example, 19:14 – 20:11.

VI. 37 C.F.R. 1.607(a)(6).

This Request and the accompanying 37 C.F.R. 1.607(a)(4) Amendment are being submitted prior to one year from the issue date of the '896 patent. The initial 13 March 2002 Request for an Interference and its accompanying 37 C.F.R. 1.607(a)(4) Amendment were submitted prior to one year from the issue date of the '744 patent and prior to one year from the publication of the '268 application.

VII. Request for the Benefit of the Filing Dates of Applicants' Priority Applications.

Applicants claim priority under 35 U.S.C. 120 based upon international application PCT/NZ95/00106, which designated the United States and was filed on 16 October 1995, and under 35 USC 119 based upon New Zealand applications 264864, filed 4 November 1994, and 272778, filed 15 August 1995. Copies of the priority documents, including certified copies of the foreign applications, should be located in the file wrapper of U.S. Patent Application Ser. No. 08/817,445 which issued as U.S. Patent No. 6,198,458 on 6 March 2001. (This was the U.S. national stage application of the PCT application, and was the grandparent of the captioned '155 application. The intervening parent application was filed on 15 November 2000 and issued as U.S. Patent No. 6,346,924 on 12 February 2002.) Applicants are entitled to the benefit of the filing dates of the earlier filed applications for interference purposes if the count reads on at least one adequately disclosed embodiment in an earlier application. Weil v. Fritz, 572 F.2d 856, 865-66 n.16, 196 U.S.P.Q. 600, 608 n.16 (CCPA 1978). Applicants meet that standard,

assuming that the examiner recommends applicants' proposed count to the Board. The captioned '155 application is a descendant in a line of continuation applications from the PCT application, and the disclosure filed as the captioned application on 18 December 2001 is identical to the disclosure filed as the PCT application on 16 October 1995. Consequently, the application of the terms of the claims to the disclosure in Section V supra is applicable at least to the corresponding parts of the PCT application.

VIII. 37 C.F.R. 1.608.

37 C.F.R. 1.608 does not apply because the effective filing date of the captioned '155 application is several years earlier than the 30 June 1999 effective filing date of the '744 patent and of the '896 patent.

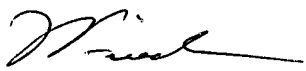
IX. Submission of Proposed Form PTO-850.

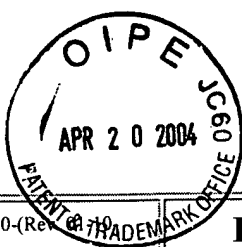
A proposed Form PTO-850 is submitted for the convenience of the examiner. The applicants request the examiner to call the undersigned at the below-listed telephone number, if there are any other documents or information which will assist the examiner in acting on this request for an interference.

Respectfully submitted,

Date: 20 April 2004

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120 South Riverside Plaza
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(312) 655-1500


L. Friedman, Reg. No. 37,135



Form PTO-850-(Rev. 10-1-2001)

INTERFERENCE INITIAL MEMORANDUM

Count # _____

To the Board of Patent Appeals and Interferences:

An interference is proposed involving the following 2 parties—

PARTY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY
Heinz et al.	10/025,155	18 December 2001		

If the involved case is a patent, have its maintenance fees been paid? Yes ☐ No ☐ Not due yet ☐

Proposed priority benefit (list all intervening applications necessary for continuity):

COUNTRY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY
US	09/713,614	15 November 2000	6,346,924	12 February 2002
US National Stage International	08/817,445 PCT/NZ95/00106	30 April 1997 16 October 1995	6,198,458	6 March 2001
NZ	272778	15 August 1995		
NZ	264864	4 November 1994		

The claim(s) of this party corresponding to this count: **22 through 63**

PATENTED OR PATENTABLE PENDING CLAIMS **22 through 63**

UNPATENTABLE PENDING CLAIMS **None**

The claim(s) of this party NOT corresponding to this count: **None Pending**

PATENTED OR PATENTABLE PENDING CLAIMS

UNPATENTABLE PENDING CLAIMS

None Pending

None Pending

PARTY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY
Singer et al.	09/343,088	30 June 1999	6,239,744	29 May 2001

If the involved case is a patent, have its maintenance fees been paid? Yes ☐ No ☐ Not due yet ☒

Proposed priority benefit (list all intervening applications necessary for continuity):

COUNTRY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY

The claim(s) of this party corresponding to this count: **1 through 48**

PATENTED OR PATENTABLE PENDING CLAIMS 1 through 48	UNPATENTABLE PENDING CLAIMS
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The claim(s) of this party NOT corresponding to this count: **None**

PATENTED OR PATENTABLE PENDING CLAIMS None	UNPATENTABLE PENDING CLAIMS None
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(Check off each step, if applicable) **INSTRUCTIONS**

- 1. Obtain all files listed above.
- 2. Confirm that the proposed involved claims are still active and all corrections and entered amendments have been considered. The patents must not be expired for, among other things, failure to pay a maintenance fee (Check PALM screen 2970).
- 3. If one of the involved files is a published application or a patent, check for compliance with 35 U.S.C. 135(b).
- 4. Obtain a certified copy of any foreign benefit documents where necessary (37 CFR 1.55(a)).
- 5. Discuss the proposed interference with an Interference Practice Specialist in your Technology Center.

DATE	PRIMARY EXAMINER (signature)	ART UNIT	TELEPHONE NO.
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DATE	INTERFERENCE PRACTICE SPECIALIST or TECHNOLOGY CENTER DIRECTOR (signature)	TELEPHONE NO.
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Form PTO-850-(Rev. 01-10-2001)

INTERFERENCE INITIAL MEMORANDUM

Count # _____

To the Board of Patent Appeals and Interferences:

An interference is proposed involving the following 2 parties—

PARTY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY
Heinz et al.	10/025,155	18 December 2001		

If the involved case is a patent, have its maintenance fees been paid? Yes ___ No ___ Not due yet _____

Proposed priority benefit (list all intervening applications necessary for continuity):

COUNTRY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY
US	09/713,614	15 November 2000	6,346,924	12 February 2002
US National Stage International	08/817,445 PCT/NZ95/00106	30 April 1997 16 October 1995	6,198,458	6 March 2001
NZ	272778	15 August 1995		
NZ	264864	4 November 1994		

The claim(s) of this party corresponding to this count: 22 through 63

PATENTED OR PATENTABLE PENDING CLAIMS 22 through 63

UNPATENTABLE PENDING CLAIMS None

The claim(s) of this party NOT corresponding to this count: None Pending

PATENTED OR PATENTABLE PENDING CLAIMS

UNPATENTABLE PENDING CLAIMS

None Pending

None Pending

PARTY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY
Singer et al.	09/817,268	27 March 2001	6,677,896	13 January 2004

If the involved case is a patent, have its maintenance fees been paid? Yes ___ No ___ Not due yet X

Proposed priority benefit (list all intervening applications necessary for continuity):

COUNTRY	APPLICATION NO.	FILING DATE	PATENT NO., IF ANY	ISSUE DATE, IF ANY

The claim(s) of this party corresponding to this count: **1 through 32**

PATENTED OR PATENTABLE PENDING CLAIMS **1 through 32**

UNPATENTABLE PENDING CLAIMS

The claim(s) of this party NOT corresponding to this count: **None**

PATENTED OR PATENTABLE PENDING CLAIMS **None**

UNPATENTABLE PENDING CLAIMS **None**

(Check off each step, if applicable) **INSTRUCTIONS**

- 1. Obtain all files listed above.
- 2. Confirm that the proposed involved claims are still active and all corrections and entered amendments have been considered. The patents must not be expired for, among other things, failure to pay a maintenance fee (Check PALM screen 2970).
- 3. If one of the involved files is a published application or a patent, check for compliance with 35 U.S.C. 135(b).
- 4. Obtain a certified copy of any foreign benefit documents where necessary (37 CFR 1.55(a)).
- 5. Discuss the proposed interference with an Interference Practice Specialist in your Technology Center.

DATE	PRIMARY EXAMINER (signature)	ART UNIT	TELEPHONE NO.
DATE	INTERFERENCE PRACTICE SPECIALIST or TECHNOLOGY CENTER DIRECTOR (signature)		TELEPHONE NO.
			Page ____ of ____



PROPOSED COUNT FOR HEINZ (Application Ser. No. 10/025,155)
v. SINGER (Pat. No. 6,239,744 and Pat. No. 6,677,896)

The claim numbers of the corresponding Heinz claims are added for convenience.

22. An antenna control system for a land-based mobile radio system comprising:
- a sensor for detecting a position of a down-tilt antenna;
 - an antenna controller communicating with said sensor for controlling said antenna position; and
 - a main controller communicating with said antenna controller in order to control said antenna controller. OR
23. The antenna control system according to claim 22, wherein said main controller is remotely located from said down-tilt antenna. OR
24. The antenna control system according to claim 22, further comprising a user interface communicating with said main controller to operate said main controller. OR
25. The antenna control system according to claim 23, wherein a user interface transmits data to said main controller to position said down-tilt antenna and receives data from said main controller indicating said antenna position. OR

26. The antenna control system according to claim 25, wherein said main controller informs said user interface that said main controller is unable to communicate with said antenna controller. OR

27. The antenna control system according to claim 25, wherein said main controller informs said user interface that it is unable to adjust said antenna position to a desired antenna position. OR

28. The antenna control system according to claim 22, further comprising an antenna controller memory connected to said antenna controller for storing at least one of an antenna address and said antenna position. OR

29. The antenna control system according to claim 22, further comprising a main controller memory connected to said main controller for storing at least one of an antenna address and said antenna position. OR

30. The antenna control system according to claim 22, further comprising:
a motor for adjusting said antenna position; and
a driver connected to said motor and said antenna controller for activating said motor. OR

31. An antenna control system for controlling a plurality of antennas comprising:

a plurality of sensors each for detecting positions of a respective one of said antennas;

a plurality of antenna controllers each communicating with corresponding sensors of said plurality of sensors for controlling a position of said associated antenna; and

a main controller communicating with said antenna controllers in order to control said antenna controllers. OR

32. The antenna control system according to claim 31 further comprising a serial interface connecting said main controller and said antenna controllers. OR

33. The antenna control system according to claim 31 further comprising a parallel interface connecting said main controller to each of said antenna controllers. OR

34. The antenna control system according to claim 31, further comprising a wireless communication interface including a plurality of transceivers individually connected to respective antenna controllers of said plurality of antenna controllers and a transceiver connected to said main controller for providing communications between said plurality of antenna controllers and said main controller. OR

35. The antenna control system according to claim 31, further comprising

a plurality of antenna controller memories, wherein each antenna controller memory is respectively connected to each of said plurality of antenna controllers for storing at least one of an antenna address and said antenna position. OR

36. The antenna control system according to claim 31, further comprising a main controller memory connected to said main controller for storing at least one of an antenna address, and said antenna position. OR

37. The antenna system according to claim 31, further comprising:
a plurality of motors each for adjusting said position of the associated antennas; and
a driver connected to each of said plurality of motors for driving said plurality of motors. OR

38. An antenna control system for controlling a plurality of antennas located on a tower, each antenna having a position, said antenna control system comprising:
a plurality of sensors, each sensor associated with one of said plurality of antennas for detecting said antenna positions;
a plurality of antenna controllers each connected to a respective one of said plurality of sensors for reading said detected antenna positions and for adjusting said antenna positions based on said detected antenna positions; and

a main controller communicating with said plurality of antenna controllers for controlling said plurality of antenna controllers to adjust said antenna positions. OR

39. An antenna control system according to claim 38, wherein said main controller is remotely located from said plurality of antenna controllers. OR

40. An antenna control system according to claim 38, wherein said main controller is remotely located from said tower. OR

41. The antenna control system according to claim 38, further comprising, a plurality of motor driving assemblies for adjusting said antenna positions, wherein each of said plurality of motor driving assemblies are controlled by respective ones of said plurality of antenna controllers. OR

42. The antenna control system according to claim 41, wherein the motor driving assemblies comprise a gear train of phase shifters to steer radiation emitted from said antennas; a stepper motor to drive said gear train of phase shifters; a gear shaft disposed between said gear train and said stepper motor; and a stepper-motor-driver for powering said stepper motor. OR

47. An antenna control system comprising:

a sensor for detecting a position of a down-tilt antenna without respect to a satellite position;

an antenna controller communicating with said sensor for controlling said antenna position;

a main controller communicating with said antenna controller in order to control said antenna controller; and

a user interface communicating with said main controller to operate said main controller. OR

48. The antenna control system according to claim 47, wherein the user interface transmits data to said main controller to position said down-tilt antenna and receives data from said main controller indicating said antenna position. OR

49. The antenna control system according to claim 48, wherein said main controller informs said user interface that said main controller is unable to communicate with said antenna controller. OR

50. The antenna control system according to claim 48, wherein said main controller informs said user interface that it is unable to adjust said antenna position to a desired antenna position. OR

51. An antenna control system comprising:

a sensor for detecting a position of a down-tilt antenna without respect to a satellite position;

an antenna controller communicating with said sensor for controlling said antenna position;

a main controller communicating with said antenna controller in order to control said antenna controller, wherein said main controller is remotely located from said down-tilt antenna, and

an antenna controller memory connected to said antenna controller for storing at least one of an antenna address and said antenna position. OR

52. The antenna control system according to claim 51, further comprising a main controller memory connected to said main controller for storing at least one of an antenna address and said antenna position. OR

53. The antenna control system according to claim 51, further comprising:

a motor for adjusting said antenna position; and

a driver connected to said motor and said antenna controller for activating said motor. OR

54. A method of positioning a down-tilt antenna in an antenna control system used in land-based mobile communications, said method comprising the steps of:

(A) establishing a current position of the down-tilt antenna by;

- (i) sending an antenna check command to an antenna controller,
- (ii) reading a tilt position stored in a memory of the antenna controller, and
- (iii) sending the tilt position read from the memory to a main controller; and

(B) adjusting the tilt of the down-tilt antenna by;

- (i) sending a change-tilt command to the main controller,
- (ii) calculating a difference between the tilt position and the change-tilt command to determine an antenna adjust command, and
- (iii) sending the antenna adjust command to an antenna motor driver assembly to adjust the tilt of the down-tilt antenna. OR

55. The method according to claim 54, wherein step (B) further comprises,

- (iv) reading the newly adjusted tilt position of the down-tilt antenna via a sensor, and
- (v) writing the newly adjusted tilt position as the tilt position in the memory of the antenna controller. OR

56. A method of performing a system check on a tilt antenna control system, said method comprising the steps of:

- (A) requesting a system check by a user via a user interface;

(B) transmitting an antenna check command from a main controller to an addressed one of a plurality of antenna controllers;

(C) returning an antenna position from the addressed antenna controller to the main controller; and

(D) determining whether the addressed antenna controller responded.

OR

57. A method of performing a tilt setting change on an antenna system, said method comprising the steps of:

(A) transmitting a tilt setting change command, selected by a user, from a user interface to a main controller; and

(B) transmitting a change tilt command combined with an antenna controller address from the main controller to an addressed antenna controller of a plurality of antenna controllers. OR

58. The antenna control system according to claim 47, wherein the position of the down-tilt antenna is an electrical down-tilt. OR

59. The antenna control system according to claim 47, wherein the position of the down-tilt antenna is a position of at least one phase shifter. OR

60. The method according to claim 54, wherein the tilt position is an electrical down-tilt. OR

61. The method according to claim 54, wherein the tilt position is a position of at least one phase shifter. OR

62. An antenna control system comprising:

a sensor for detecting a position of components used to down tilt an antenna and by this action determine the down tilt of the antenna;

an antenna controller communicating with said sensor for controlling said antenna position;

a main controller communicating with said antenna controller in order to control said antenna controller, wherein said main controller is remotely located from said antenna,

a user interface communicating with said main controller to operate said main controller, and

an antenna controller memory connected to said antenna controller for storing at least one of an antenna address and said antenna position. OR

63. The antenna control system according to claim 62, wherein the user interface transmits data to said main controller to position said antenna and receives data from said main controller indicating said position.